Rochester Institute of Technology

College of Graphic Arts & Photography
School of Photographic Arts & Sciences

One Lomb Memorial Drive
P.O. Box 9887
Rochester, New York 14623
716-475-2716

LANDSAT-D BAND 6 DATA EVALUATION

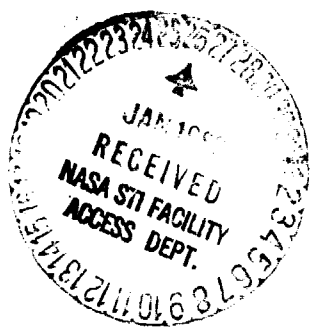
Contract #NAS5-27323

First Quarterly Report

December 15, 1982

Prepared For:

NASA/Goddard Space Flight Center
Greenbelt, Maryland 20771



Objectives:

The objectives of this investigation are to evaluate and monitor the radiometric integrity of the Landsat-D Thematic Mapper (TM) thermal infrared channel (band 6) data and to develop improved radiometric preprocessing calibration techniques for removal of atmospheric effects.

Problems:

To date no 1600 BPI TEM tapes with band 6 data have been received. Since the dedicated computer primarily available for TEM data processing cannot handle 6400 BPI tapes, preliminary program development has been impeded.

Accomplishments:

Upon receipt of contract NAS5-27323, a purchase order was issued to have a filter fabricated to match the spectral response of the Landsat band 6 sensors. This filter has been received and the combined system response function computed. The half power points for the aircraft system are 10.5 and 11.55 μm compared to the 10.4 and 11.6 μm values for the satellite. These discrepancies are considered acceptable, their effect on the apparent temperature observed at the satellite is being evaluated, and the filter has been installed in the infrared line scanner. The line scanner has been installed in the aircraft and field checked. A daytime underflight of the satellite is scheduled for the next clear overpass and the feasibility of a nighttime overpass is being discussed with NASA.

The LOWTRAN 5 computer code has been obtained from the Air Force Geophysical Laboratory and is being implemented for use on this effort.

Significant Results:

None this reporting period.

Publications:

None this reporting period.

Recommendations:

With reference to "Problems" above, we would recommend that 1600 BPI tapes be made available to investigators as soon as possible.